

**Despite the promise of open protocols and interoperability, the majority of facility managers are still locked into a proprietary sole source vendor for building automation system (BAS) technology.** Using a sole source vendor can be appealing because he offers the simplicity of having just one contact for everything a building needs: there's no need to stock surplus equipment or train staff on multiple systems. But sole sourcing exposes the facility manager to that single vendor's stringent fee structure. The flip side to sole sourcing is entertaining open—or competitive—bids. This, too, can be a hassle because the risky mix of different products across facilities increases the complexity of service and support down the road.

So how can a facility manager get the best of both worlds? How can he retain the simplicity of a sole source arrangement, but keep that one vendor honest in his pricing? The answer is *dual sourcing*, which qualifies a select few open protocol vendors—according to strict criteria developed by the facility manager—who collaborate with the current vendor to provide all the building controls. The competition keeps life cycle costs down and the limited vendor list keeps complexities at a minimum.

This white paper will help facility managers identify whether their building is locked in by a sole source vendor, develop strategies to assess the costs and benefits of that arrangement, and offer a how-to for unlocking a building. Facility managers will be able to qualify open protocol vendors, develop comparisons and initiate technical strategies they can start using today.

## Are you locked in?

Having a sole source relationship with a controls contractor or mechanical contractor isn't in itself a bad thing. In fact; it may be right for a facility manager. If he's in a single-source situation, however, he wants to realistically assess the cost to him. This section offers tips and tools to do that.

## What does "locked in" really mean?

Basically, "locked in" means a lack of choice. In a sole source scenario, a facility manager is pretty much subject to whatever controls his vendor picks to outfit the building. The vendor's system capabilities dictate the facility manager's retrofit or expansion plans. His building controls budget is in the vendor's hands.

The facility manager should take a look at his retrofit or expansion needs. Any plans to expand or update the building will significantly impact the scope and design of the building

controls. This is also true if there is a change in the nature of tenants or their space—for example, adding food vendors or a healthcare-affiliated occupant. Subsequently, a facility manager must determine what his existing proprietary vendor can and will charge to undergo the remodels; if the vendor has more influence than the facility manager on the future of his own building, that facility manager is definitely locked in.

The most tangible way for a facility manager to assess whether or not he is locked into a sole source arrangement is to look at his vendor's pricing conventions:

- Does the sole source vendor offer standard pricing?
- Does the facility manager get discount pricing for the equipment he orders most often?
- Does the sole source vendor itemize materials and labor on his bill?
- Does the facility manager understand and agree to every line item he pays for on his service contract?
- Does the sole source vendor charge fair or comparable market prices for add-ons or changes to the system?

If the answer is "no" to any of these, a facility manager's lack of choice should be a clear indication of being locked in to his sole source vendor.

Finally, it can be determined whether or not a facility manager is locked into a sole source vendor by less tangible criteria—for example, his interaction with the vendor. Does the vendor reply promptly to the facility manager's calls or emails? Does he listen to issues with concern and respond with thoughtful answers? Does he identify cost-saving ideas without being asked? Does he make the facility manager feel like he has a lot of choice or input in how his own building is run? If a facility manager answers no to any of these questions, he very well may be locked in.

Sole sourcing—flat-spec or negotiated work—is dangerous because it gives the vendor the "state-run" stranglehold on the facility manager's BAS. First, if the vendor says a specific piece of equipment or service call is needed, the facility manager has little choice but to agree. Second, there are no checks and balances with respect to price comparison. After the initial construction phase, where the vendor may lowball the facility manager just to get the job, subsequent phase cost increases can be astronomical.

## A case study

In a real-life scenario, one proponent of dual sourcing—a large, west coast municipality—achieved an average savings

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of 20% on its overall heating, ventilating and air conditioning (HVAC) controls expenditures. The City has five departments that oversee everything from arts and recreation to public safety, utilities and transportation. Most City properties feature a significant physical plant inside. In 2003, concerned with the high and escalating costs for its proprietary building controls, the facilities projects manager performed a study to analyze what the City paid compared to market price, and whether the high fees were related to technical issues or simply premium pricing for a proprietary solution. The analysis was based on several recently completed projects and submitted bids, including projected costs for future work.

The facilities projects manager used three resources to find industry standards:

- RS Means CostWorks, a comprehensive, industry standard database of unit costs, assemblies costs or square foot models, crew costs and more
- Corporate profit-and-loss statements for the proprietary vendor
- Polling HVAC industry professionals

He discovered the proprietary vendor charged up to 51% above market price. On five recent City projects where the proprietary vendor's bids equaled \$4.6 million, these excess charges totaled more than \$1.5 million. On one particular comparison between two similar commercial high-rises, the facilities manager determined that the proprietary vendor charged \$1.33 per square foot while an Alerton BACtalk system cost only \$1.00 per square foot—resulting in a difference of more than \$168,000. The scope of work had been nearly identical.

The City then considered its options. It could open up its building controls projects to competitive bidding. It could attempt to have a more strategic partnership with the proprietary vendor—which would include asking them to open their books to the City. As a third option, the City could opt to dual source the building controls. Further study revealed that, for subsequent work required on City properties, dual sourcing made the most sense, both economically and for the long term.

To decide which BACnet vendor would collaborate with the already-installed proprietary system, the City outlined particular criteria for contenders to meet:

- Open protocol (BACnet) products down to the lowest equipment levels
- Unlimited software license versus annual renewal and seat fees

- A good local presence in both construction and service
- Factory-trained engineers
- Ability to challenge the current vendor on pricing and service
- Parts assembled in the USA
- A realistic level of compatibility with my existing system
- A manufacturer that demonstrates flexibility and innovation in their product designs—as an indication of future product developments
- Good long-term reference customers who are willing to let potential customers tour their sites

The City chose Alerton as its open systems vendor to integrate with the proprietary equipment. In a dual sourcing scenario with Alerton's BACtalk system, the City found that it could achieve average savings of 20% or more on equipment and service. Its annual operating costs could continue indefinitely at or near the same level. And compared to the savings, the City's training costs are minimal.

### Assessing the costs of being locked in

Wherever possible, a facility manager should assess costs and benefits in quantitative terms. Track accurate hard figures when he can. For example, after he finds the costs of goods for his building system, he can then use those costs to get a rough idea of the profit margin his sole source vendor makes. How to do this? Carry out a competitive analysis: determine what is standard in the industry. A facility manager should find out what the overhead is for his sole source vendor. If the vendor's overhead is high and profit margin narrow, he may be charging the facility manager inflated fees to make up the difference.

The facilities project manager in the case study example above used the RS Means CostWorks database to obtain accurate industry standards for costs on an average project. Industry databases are comprehensive, easily available, and can save a facility manager a lot of time and money in the search for a building controls contractor.

Next, get help. A controls consultant will share his or her industry knowledge of the practices involved with installing and maintaining building controls. This knowledge includes the methods vendors use to bill time for a particular project, the dynamics of dealing with the electrical contractor, and details of the relationship between domestic or international supply vendors and the local dealer. The controls consultant

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can look at the fees, hours and charges and determine their appropriateness compared to the amount of work being done.

An independent auditor has a specific financial responsibility to the building controls project and will act as its accountant. He or she will review the hourly rates and calculate the charges for overhead or management. The auditor will also analyze profit and loss on the project and review the discount structure relative to product pricing from other vendors.

A facility manager shouldn't get railroaded into thinking something is vital to the building's system operation when it isn't. The myth of training is a good example of this. The cost of training was a show stopper for many who initially sought to unlock their systems by learning more about them. In reality, training is—or should be—a small percentage of the overall building operations budget.

Finally, facility managers should keep in mind that while their organization truly is unique, all building systems share certain characteristics. As such, there shouldn't be too many "gotchas" in the building controls budget. In reviewing costs for new construction, normal maintenance, major maintenance and upgrades, the facility manager should make sure his single source vendor's pricing doesn't unduly exceed what the market recommends. For example, parts and inventory for the HVAC system should take no more than about 8% of any typical building's annual operating budget; equipment replacement, no more than 15%. Also, certain components of an HVAC system have a set range of installation costs—for example, packaged terminal air conditioners at \$5–\$7 per square foot—that don't change across building types.<sup>1</sup> Also, non-economic factors such as

tenant comfort can heavily influence the cost of building controls and a facility manager must take into consideration what his sole source vendor charges for less tangible deliverables.

**Unlocking the BAS**

If a facility manager finds that he is—or feels—locked into his sole source building controls vendor, he has an alternative. There are just a few steps to take to unlock the BAS and open the door to a more mutually beneficial relationship with controls providers.

**Qualify open protocol vendors**

The first step for a facility manager is to qualify open protocol vendors in his area. He can then create a matrix of the features he requires in a partner, then evaluate his vendors on those criteria. The City in the case study example above included in its matrix a large installed base of satisfied customers, a large staff of factory-trained engineers and BACnet interoperability. Facility managers should assign values to their own required features, based on the very specific needs of their building and working style. Table 1 below shows a sample evaluation checklist.

Whatever criteria a facility manager chooses to rank potential vendors, open protocols and a strong service commitment should be weighted heavily for any organization seeking to unlock its proprietary building controls system.

**Assess the technology**

A facility manager must ensure the proposed technology is cost effective and suitable for his needs—not just now,

<b>Vendor Evaluation Checklist</b>	<b>Importance (1–10)</b>	<b>Included Yes/No</b>	<b>Points</b>	
Open protocol (BACnet) products down to the lowest equipment levels	10	Yes	10	
Unlimited software license versus annual renewal and seat fees	8	Yes	8	
A good local presence in both construction and service	9	Yes	9	
Factory-trained engineers	6	Yes	6	
Ability to challenge the current vendor on pricing and service	10	Yes	10	
Parts assembled in the USA	5	Yes	5	
A realistic level of compatibility with my existing system	6	No	0	
A manufacturer that demonstrates flexibility and innovation in their product designs—as an indication of future product developments	8	Yes	8	
Good long-term reference customers who are willing to let potential customers tour their sites	10	Yes	10	
Additional questions				
		<b>Total</b>	<b>66</b>	

**Table 1. Sample vendor evaluation checklist**

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but in the future as well. The broader the acceptance of the technology, the better off the facility manager will be and the more options he'll have down the road. Most vendors offer BACnet today because it is the most widely accepted industry protocol for building controls.

Some questions a facility manager should ask himself include:

- Is this technology featured in a large installed base, with customers who are happy with their building controls solution?
- Is this technology innovative, providing solutions that I haven't found elsewhere?
- Is it flexible enough to fit the unique needs of my building without increasing the complexity of my system?
- Does this technology come with a comprehensive service offering so that my building runs as specified without being nickel-and-dimed on every service call?
- Does this technology offer an unlimited software license so that I get the most cost effective price per user?
- Is this technology offered by a locally owned vendor, one who has ties to my community and a low overhead?

### Next Steps

Once the facility manager has determined he wants to unlock his BAS, he can begin the dual sourcing process. The first step is to change his specification. A consulting-specifying engineer (CSE) can use an online spec-building tool such as OpenSPECS (<http://specify.bacnet.com>) to flesh out the precise components needed to spec an open system for the building.

The facility manager will take the spec to his existing vendor and negotiate diligently with him. A controls consultant can review the spec and advise the facility manager during talks with his current vendor. If there is still a significant gap between market price and the current vendor's price, the facility manager should then engage the second, open protocol vendor for dual sourcing.

The last step for the facility manager is to send out a competitive bid through the usual RFP process. Because he already qualified open-protocol vendors during his research—and because he's only choosing one of them as his dual sourcing partner—he eliminates the risk of complicating his system with a mix of different products.

Dual sourcing is a win-win scenario. A facility manager retains familiarity with his current system and saves the relationship with his existing vendor. And he saves the costs of swapping out an entire BAS while gaining an open-protocols partner who rounds out his BAS with extensible, cost competitive solutions.

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1 "Maximizing HVAC Mechanical Systems," PowerPoint presentation, 2003 National Association of State Energy Officials Conference, February 11, 2003, <http://www.naseo.org/events/outlook/2003/presentations/Weise.pdf>

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### Sidebar

1. Is this vendor a "price-challenger" to my current vendor or does he have a history of pricing products above the market?
2. Can this vendor demonstrate industry leadership, longevity and stability?
3. Do the vendor and the manufacturer demonstrate innovation and flexibility in their product designs, manufacturing methods and business structures?
4. Is the vendor's local organization focused on providing high quality service and support for my organization's future growth?
5. Regardless of local organization size, can this vendor meet my current needs?
6. Has this vendor demonstrated a long-term commitment to his existing customers' needs?
7. Does this vendor have a cost effective product and installation plan for my unique situation?
8. Can this vendor guarantee BACnet interoperability and future compatibility at all levels?
9. Does this vendor offer an unlimited software license so that my operations budget isn't "nickel-and-dimed" on seat licenses and annual renewal fees?
10. Does this vendor offer a realistic level of compatibility with my existing system to protect my original investment?